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ABSTRACT

This paper probes the implications for psychology of recent advances in the study of young children's acquisition of communication skills. The inadequacy of traditional ways of thinking about cognitive and social development as a base for developmental psycholinguistics is discussed and the lack of attention to the basic cognitive schemes which organize the child's construction of human persons as distinct from inanimate objects is identified as a central problem. It is argued that an attempt should be made to combine basic Piagetian methodology with recent advances in the pragmatics of natural language to investigate the logical implicature of children's communication skills. Features of the linguistic communication skills of 3- and 4-year-old children are examined to determine what they reveal about the presuppositional and pragmatic base of children's utterances. It is suggested that young children begin to construct a model of human beings acting in a rule-governed social world. The basic features of this model are described and the potential contribution of such a model to the study of cognitive development is discussed. (Author/JMB)

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THE CHILD AS PSYCHOLOGIST: CONSTRUING THE SOCIAL WORLD

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Summary

This paper probes the implications for psychology of recent advances in the study of young children acquiring communication skills. Traditional ways of thinking about cognitive and social development provide too tenuous a base for developmental psycholinguistics, and in particular they give little account of the basic cognitive schemes which organise the childs construction of human persons as distinct from inanimate objects. It is argued that an attempt should be made to combine the basic Piagetian methodology of analysing the logical implicature of behaviour and recent advances in the pragmatics of natural language to tackle the logical implicature of basic communication skills. Features of the linguistic communication skills of three and four year old children are examined to uncover what they reveal about the presuppositional and pragmatic base of childrens utterances. It is suggested that they show the beginnings of a model of human beings acting in a rule governed social world. This model has abstract generalisable features of a far more complicated kind than those quantifiable characteristics of objects which govern our actions in the material world. These generalisable features form the basis of the differentiated personal constructs which gradually build up from childhood onwards. The mapping of these constructs would build up a more rich and credible picture of the development of human thinking and human behaviour than the study of cognitive development has hitherto been able to provide.

There is a curious asymetry in the literature concerned with child development between those studies which take as their field the cognitive development of the child, and those which are concerned with the development of his relationships with persons and his know-

ledge of the complex web of social connections within which he lives. In traditional studies of cognition, the child and the researcher are both seen to be operating with a system of concepts which, though different in focus and in degree of elaboration are within the same domain - the domain of objective knowledge, and within this domain the cognitive psychologist and his child subjects are, in a sense fellow workers.

Turn to the work on social or emotional development and the picture changes. For one thing, a new vocabulary emerges which deals less with perceptions, memory and operations and more with psychological entities such as attachment, dependency, affiliation and aggression. Whatever vocabulary he uses, however, the student of emotional and social development is doing the same kind of job that the student of cognitive development is doing, he is developing classifications, measuring constants, creating conceptual systems and theories about personal and interpersonal behaviour. He does not usually, however, regard his subject as engaged in the same activity at all. While the researcher is developing concepts about affiliation, his subject is affiliating, while the researcher is evolving categorical systems for observing interactions, his subject is interacting. The developmental psychologist does not appear to think that any of this behaviour does or could result from his subjects doing what he himself is doing; that is forming a reasoned model of the social and personal world, using inference and deduction, deriving logical models from his own and other peoples social actions and elaborating hypotheses, expectations and rules.

The impact of the personal and social world on the child is almost always described in terms of affective rather than cognitive consequences. Yet Schaffer (1971) has shown that attachment, that

most powerful manifestation of affect, must be closely tied up with perception and the development of stable representations of identity for the caretaker and other familiar family figures. Such representations are of course soaked with emotional meaning, and this makes them more significant and powerful, but in what way does this make them less cognitive than the representations of physical objects? Furthermore, as Bromley (1975) has pointed out, the child acquiring language develops a whole repertory of verbal labels and speech acts concerned with the activities and feelings of persons. These are words about thinking, wanting, liking, being friends. There are claims for possession, assignments of roles, words for sharing play proposals, threats, protests, appeals to social rules. In so far as children can use this repertory, it appears reasonable that the terms of it refer to internal representations of behaviour as much as words like mug and chair refer to representations of experienced objects. Furthermore, if they can use these words in talking to other people, there is a presumption that they assume that other people share these representations in a way which will allow them to understand to what the speaker is referring in using a word like friend, or in assigning roles such as "mummy" or "daddy" whether in earnest or in play.

THE INADEQUACIES OF TRADITIONAL APPROACHES TO CHILDRENS SOCIAL LEARNING

Why has the term cognitive come to be associated almost exclusively with knowledge of the inanimate world? One reason is the division of labour between psychologists where boundaries have developed between learning theory, social psychology, psychology of the emotions and developmental psychology. Another is the tradition of scientific work within psychology with its emphasis on laboratory experiment. Experiments in learning, what-

ever their theoretical base, tend to use simple overt responses to simple sensory inputs, or operations on carefully selected manipulanda in order to control the variables in the experimental design. Complex inputs from human beings make for messy experiments, or suspect confederacies between the psychologist and his human tools. A third factor which cannot be overestimated is the impact of Piaget's work both on cognitive psychology and child development. His attempt to establish a synthesis between biological function and adaptation and the logical properties of thought has remained within the traditional boundaries of epistemology with its concentration on space, time and substance. In accounting for the unique and powerful fit which has developed between man's thinking and the objective world, Piaget has concentrated on operations on the inanimate environment and the mathematical logical schemes which develop from them. Only in his early work on moral thinking did he deal at length with some of the cognitive rules governing social behaviour. (Piaget 1932).

CHILDREN - SELF ORIENTED OR SOCIALLY ORIENTED?

Piaget also contributed to another group of theories usually gathered under the heading of early childhood egocentricity, which have been extremely pervasive in developmental studies, and which have tended to block investigation of childrens' social understanding. Theories of childhood egocentricity fall roughly into two groups: those which are 'instinct' based and which assume that the child's thinking is dominated by internal dynamic states, and those which are cognitively based and hold that the child's perception of reality is biased by an original monocentric viewpoint which does not allow for differences in perspective between the child and others.

The instinct based group is very diverse and unfortunately

this endows the term 'egocentricity' with a confusing range of meanings which are complicated and semantically infected by the common-language use of egocentricity as a synonym for selfishness. Not only is the term used in psychodynamic research where it is loosely identified with the orientation of the instinctual self or 'id'. It is also used in behavioural research which bases the study of socialisation on the acquisition of secondary motivations derived from primary biological drives. It has also been employed in sociological investigations in the tradition of Durkheim and G.R. Mead which made the assumption that the child is a kind of animal or savage who is tamed into humanity by the modification of his primitive, instinctual, egocentric needs by socialising agencies. This assumption of original egocentricity sometimes appears very like a scientific version of the doctrine of original sin! However, both instinct based egocentrism and cognitive egocentrism have recently come under fire.

The theory that the young child is dominated by organismic drives has now begun to cede before a more ecological model of constant interaction between the child and his environment, above all his social environment. Bowlby's monumental study of attachment has indicated a genetic base for social processes, and the mounting number of close studies of mother child interaction are outlining a picture of the baby as a social interactor from the outset. (Bowlby 1969; Trevarthen 1974).

There is now ample research to attest the disposition of young babies to prefer human voices to other forms of noise. ; Eimas et al 1971; Eimas 1975. There is also much evidence that they attend preferentially to human faces and that the attachment to specific human beings is based on the

development of a differentiated perception of persons. (Bowlby 1969; Schaffer 1971; Carpenter 1974). The cross-model association of auditory and visual inputs at an extremely early age is suggested by the work of Aronson and Bower (1974) which appears to indicate that the young baby of three weeks expects the human voice to appear in the same orientation as the human face. Furthermore, the fine-grained studies of young babies which have been made possible by the development of audio/visual recording technology are now revealing the delicate interchange of attention and imitation between mother and infant, and some of these have also suggested that there appears to be some innate mechanism which allows visual inputs to elicit isomorphic motor inputs, i.e. that there is a neural foundation for imitation. (Bower 1975). The early operation of this mechanism in the first weeks of life fades in the same way that the stepping reflex fades, and provides further evidence that the pre-wired dispositions of the human nervous system have to be modified by various kinds of learning before the sketched in connections can become the basis of voluntary action (Bower ibid). The mounting evidence that there is an extensive and powerful genetic base for man's social propensities does not mean that social knowledge is innate. To count as knowledgeable, innately programmed behaviours must be adapted to the world outside the organism by the processing of information from the environment, including feedback from the behaviour itself. Knowledge, whether 'know how' or 'know that' is essentially adapted and therefore interactional in origin, whatever the contribution of the innate component. The recent controversies about the hypothesis of an innate language acquisition device are a warning against attributing too much of the skill acquired interactionally to a genetic base.

If the hypothesis of endogenous egocentricity has begun to

melt in the light of recent research in young babies, so too has the hypothesis of cognitive egocentricity. Until recently it was one of the major paradigms used in research on the development of social perception in children. Almost half the work cited by Schantz in her recent review of social cognition was work on role taking which explored the development of skill in allowing for the different perspectives of others. (Schantz 1975).

Flavell, who has been a leading worker in this field has, however, recently urged a more careful look at the component ideas behind egocentrism. (Flavell et al 1968, 1974). His own work and that of his team have shown that if the task is made sufficiently simple quite young children are capable of taking account of the viewpoint of others. (Masangky et al 1974). In his analysis of the child's role taking skill, Flavell counts as the first stage of the child's understanding that an object can look different from different orientations and yet be the same object. He then postulates the child's knowledge that other people may be seeing a different aspect of the same object as the next stage. (Flavell 1974). There must however, surely, be an intervening stage, one in which the child credits other people with the same ability to construct one object from different appearances that he has himself achieved. Indeed the hypothesis that the object appearing in the perception of two different people is the same object is the foundation of the entire system of linguistic reference without which communication would not be possible. Hence it is a far more fundamental and wide ranging achievement than the differentiation of other points of view, important though that is. Indeed the child's hypothesis that other people also attend to conceptually constructed objects and not to phenomenal appearances should be recognised as the astonish-

ing cognitive achievement that it is, instead of being dismissed as the source of 'egocentric' error.

BUILDING A MODEL OF SOCIAL INTERACTION

The child, however not only achieves the idea that there is a perceptual and conceptual field which is shared, he also learns to share a world of action and interaction in which the behaviour of others must be perceived and in which others must perceive his behaviour. If actions are to be co-ordinated reciprocally expectations must be built up as to what actions go with what, and Garvey (1976) and Bruner (1975, 1977) have traced the development of what Garvey calls action 'formats' which can be linked into more elaborated sequence and which themselves can be objects of reference, although they are not 'out there' like spatial objects.

It would be reasonable to expect the representations of his own and other people's behaviour to give rise to generalisable features in the same way as do representations of the impersonal world, and that these generalisable schemes would give rise to cognitive models. Unfortunately longstanding traditions in the social psychology of childhood have tended to divert attention from the nature of the models the child makes use of and to focus almost exclusively on his motivation. Thus processes such as modelling and identification are usually considered in terms of the rewardingness of the persons modelled, the child's dependence on them for satisfaction of his basic needs and his conception of their power/status. Rarely, if ever, is there any theoretical consideration of the basic cognitive content of such a model, how it is organised, retained in memory and elaborated, and what parts of it are selected to form schemes which can provide plans for imitative behaviour. Still less considered and investigated

are the constants of such a model i.e. those parts of it which are generalisable to all the many human beings whom the child encounters from an early age who neither nurture him, reward him, nor necessarily differ from him very much in power and status, and whom yet he may imitate, as Piaget's daughter Jaqueline imitated a small visitor who had flown into a rage, screaming and stamping and pushing the playpen. (Piaget 1962). If these processes of modelling, imitation and identification are going to be given cognitive structure, there will obviously have to be considerably more work on the intellectual aspects of the child's model of a human being.

CONSTRUCTING A NEW MODEL OF CHILDRENS SOCIAL THINKING

Adult social psychology has undergone great changes in the last twenty years, and has developed theoretical systems which allow for the fact that social behaviour is mutually represented in the minds of persons who are conducting relations with each other. This notion was formulated by Asch in 1952 and Heider (1958) began the link with European social phenomenologists such as Schutz (1967) which has proved increasingly influential in social psychology and socio linguistics. These advances have till the present made virtually no impact on the social psychology of childhood, a fact complained about by Schantz in her review of the field. It is only in the study of pre-linguistic and proto-linguistic communication that new ideas are beginning to make themselves felt, and this is partially because new observational technologies are revealing complicated networks of behaviour that make the traditional theories of child socialisation look simplistic or plain wrong.

Advances in theory are often closely linked to advances in technology which give a closer view of the phenomena to be studied, and

One of the delaying factors in building up a richer model of children's grasp of social processes has been lack of a methodology of study which is appropriate to the task. Interpersonal communication can now be recorded by audio-visual means, though there are still difficulties in recording in natural settings, and these recordings show that the study of communication is the key to opening up this field of investigation. The fine grained studies of pre-linguistic and proto-linguistic communication, several of which appear in this volume are a mine of fascinating information, but it is possible that they might yield even more information, and be more closely integrated with the later stages of development when language begins to play a dominating role, if a detailed examination of the cognitive implications of communication is put in hand. The question is, how to go about it?

BUILDING A MODEL OF THE COMMUNICATION PROCESS

When one is attempting to build up a new cognitive model, it is natural that one should take note of the ways that existing cognitive models have been built. Inevitably Piaget's work comes into mind, and there have been many attempts to align developments in communication with stages in sensory motor and intuitive development. (Edwards 1974; Moorehead and Moorehead 1974; Bates 1976). Interesting and important though some of this work is it suffers from the fact that Piaget's work is based on a different epistemological domain - the domain of thinking which grips on the inanimate world. Piaget once said that children learn about persons as they learn about things. If he meant by this that they form representational schemes both of other persons and of their interactions with them and that these schemes assimilate new instances, and accommodate and elaborate as new experiences cease to fit the previous structure,

then he is certainly right. The question then arises of the logical nature of these schemes for he surely cannot mean that they are of exactly the same logical kind as those which govern encounters with the spatio/temporal world. The constancy of objects in space can be stretched to cover constancy of identity of persons which is a necessary preliminary for the development of specific attachments, but what of reversability which, according to Piaget, originates in the grouping of spatial displacements which allows the child to back track and make detours by compensating movements in one direction by moving to another? Time, and human action in it, is irreversible and what has gone before is retained and reconstructed only in the minds of persons. Likewise, what is to come is unfolded in human intentions. Encounters with persons must consider the experience rolled up inside each and the potential unrolling of future activity in the consciousness of both those involved. Things in space which are the manipulanda of operations have neither quality, and operations upon them produces a different cognitive outcome - a mathematical logical outcome.

Piaget, of course, acknowledges interpersonal interaction as a major force in establishing the grouping of actions into logical structures, and also postulates that the logical organisation of structures of thought is a necessary pre-requisite for the co-ordination of interactions with other people on an agreed programme. (Piaget 1951). Naturally mutual understanding between persons in communication and action depends in part on the sharing of certain logical schemes, but this is not to say that the logical schemes that persons share about the object world are of the same kind as the schemes they share about the world of persons.

It is suggested here that a close look at the logical implicature of acts of communication might illuminate the field, and fortunately work on semantics and pragmatics which originated in linguistic philosophy has now begun to seep through into studies of natural language in a way that concentrates on just those features which make communication effective. There is not only the work by Austin and Searle on illocutionary acts, and conditions for their successful performance (Austin 1962; Searle 1969), there also is work in pragmatics which is picking out presuppositions and postulates which have to be considered if the relation between utterances and their contexts are to be fully understood. (Grice 1968; Apostel 1971).

Charles Morris made the tripartite distinction between syntax, or the study of the relations of signs among themselves, semantics, or the relation between signs and their designata, and pragmatics as the study of signs within the total behaviour of sign interpreters. (Morris 1938, 1946). While Morris focussed on the interpretations of hearers Carnap defined pragmatics as any investigation of language containing explicit reference to a speaker. (Carnap 1942). Whether the experiences of interpreters are the same as the experiences and behaviours of speakers, is, of course, a further question. Grice argued for the possibility that the speakers intended meaning should be distinguished from the meaning of his utterances as interpreted by listeners, and also from the 'timeless' interpretation which could be placed on utterances in which words had a range of conventional dictionary meanings. Furthermore, utterances were interpreted in specific contexts, and, because of the wide range of meaning possible for the majority of common expressions, only the context could add sufficient precision by the constraints it placed on use to allow of reliable interpretation by a listener.

This implies that the listener must bring his own experience to the aid of his understanding, and even so speakers meaning and listeners interpretation might not completely match. For this reason words taken out of context cannot be interpreted with the precision which they find when uttered in context, and with some specific intention by a particular speaker. (Grice 1968). The difference, as many critics point out, is severely constrained by convention, if the speaker chooses a certain utterance to convey a meaning other than the face interpretation of the words he uses, he must make use of additional conventions or frames which allow him to use it in this way and also allow the person who is the target of his message to interpret it in the way he intended. These conventions may reside outside the specifically linguistic part of the utterance in common interpretations of the shared field of meaning on the occasion of the utterance. In short, even for mature speakers with an extensive grasp of language, the exchange of meaning through speech is dependent on the sharing of an intersubjective field in which the intentions and perceptions of each partner together with a world of shared meanings must be represented both in the speaker and hearer for any exchange of meaning to be successful.

THE LOGICAL AND PSYCHOLOGICAL IMPLICATURE OF COMMUNICATIVE ACTS

This highlights the kind of problem that the young child is called upon to solve in learning to communicate. He must not only himself have representations of the world which forms the context of communication, he must also develop representations about the internal representations of others. What could be the minimum, the basic skeleton of such representations logically implied in a successful act of communication? We take so much of the immense complexity of human skill for granted that when it is spelt out

in detail it can look like a tedious statement of the obvious. Take the minimum pragmatic implicature of the following speech exchange between two small children playing, one in which the intentions and meanings of one person are successfully signalled to another. There are two little girls in the nursery home corner, Michèle (3.8) and Lisa (3.9) and Freddie, a boy, (4.2) attempts to join in. He addresses Michele who is apparently organising the play sequence:

Example 1 (1) Fre to Mic. I can be dad, can't I?

(2) Mic to Fre. You can be dad,

to Lis. and we can be two mums.

In this ordinary little exchange, there are two speaker/hearers and one listener who does not speak and two utterance tokens, both of them complex. Stripping the situation down to its barest communicational bones and ignoring the context and the implied rules about roles, what can be said about Freddie's locution from the point of view of his implied beliefs and intentions?

(1) He apparently believes that Mic. will hear his utterance.

(2) He apparently believes or expects that she will attach a specific meaning to what she hears.

(3) He intends that she should attach a meaning to it.

(4) He believes that this meaning is a possible meaning of his utterance in his language (English, nursery dialect).

(5) Fre. believes that Mic. shares this language.

(6) Fre. believes that if Mic. attaches his intended meaning to his utterance, she will know that he is the source of it.

(7) Fre. expects or hopes that as a result of attaching meaning to his utterance Mic. will also perform some action

by gesture or word which will allow him to play the role which was specified by the meaning of his utterance.

Then there is Mic's side of this communication transaction, to count it as successful we must conclude:

(8) Mic. does in fact hear Fre.'s utterance.

(9) She recognises it as having a possible meaning X in the language she understands.

(10) She in fact attaches this meaning to it.

(11) Mic. believes that Fre. was the source of the message.

(12) She believes that Fre. intended the interpretation she attached and not another.

(13) She believes that Fre. also intended that she should perform some action as a result of her interpretation of his utterance.

(14) Mic. then utters (2) above with the full implicature laid out in (1) to (8) and immediately conjoins a remark to a second addressee with a similar implicature.

With all this, nothing as yet has been said of the web of shared meanings about the world which underly the content of the exchange, only the implicature of linguistic communication as a process has been studied. This appears to show that, at a minimum, the speaker must have an image of his interlocutor as (a) having auditory perception, (b) possessing speaker/hearer competence in a shared code of signals, (c) having the ability to identify the source of a message, (d) being able to interpret a message with regard to its frame of reference, (e) being able to interpret the message with regard to intentions of the source and (f) being able to act or react to the message in some way corresponding to the tentative expectations of the speaker.

If we look at the content of the messages, we can unpack the implicature of (d), (e) and (f) more thoroughly. Take Freddie's utterance first

I can be dad, can't I?

Considered as a speech act, this is a tentative role claim within a set of roles appropriate to a game which is assumed to be known by both speaker and hearer. It is couched in a request form, consisting of a sentence with interrogative tag, the sentence bearing the content of the request and the tag functioning as response elicitor. The utterance begins with the discourse deictic I which contrasts speaker role to that of addressee and others present, and also identifies the claimant role with the speaker role. This is followed by the modal auxiliary can which, like all modal expressions, has a complex range of meaning. Part of the meaning relates to possibility i.e. dad is a possible role within the game which is the shared field of reference, it is also the most probable role for a boy to claim in house play where there are already two role playing girls. Can, however, is also used to signal permission, i.e. social possibility, and so it is linked with a set of social relations, part of which inheres in the specific context but part of which is more general, belonging to rules for entry into groups. The modal auxiliary implicitly acknowledges the organising role of Michèle and her prior right to distribute roles in 'her' game. If a group of fairly equal friends were picking up roles in a game, the role claims would be more likely to use the modal will and be expressed as intentions e.g. I'll be the dad or I'll be father Christmas, or collectively, Let's be policemen. Sometimes uncertainty may cause a change of focus between sentence and tag e.g. I'll be the nurse, can I?

The remainder of the predicate be dad consists grammatically

of a non-finite be which has a rather stronger function than merely coupling the subject and complement and carries the meaning of 'play the part of' and dad which is a specific reference to an abstract object 'the role of dad' which is part of the shared meaning. The tag, can't I, is a response elicitor couched in the interrogative form, syntactically expressed by fronting the auxiliary which carries the main semantic load. The negative postpositioned on can is an implicit acknowledgement that Michèle might negative the request, though the hope and expectation is that she won't. Nothing has so far been said about intonation. The tonic stress in fact falls on dad, but if it had fallen on ca the nature of the speech act would be different e.g.

I can be DAD, can't I (tentative role claim)

I CAN be dad, CAN'T I (protest or appeal against rejection of role claim).

So much for Freddie's attempt to join the game, now let us look in detail at the interlocking piece of discourse, Michèle's response:

Mic. to Fre. You can be dad,

to Lis. and we can be two mums.

Michèle's utterance is complex, consisting of two remarks with separate addressees conjoined by and. The you coheres with the I of the previous utterance with the appropriate shift of person and carries a contrastive tonic stress referring forward to we in the next part of the utterance. Michele does not need to nominate herself until she includes herself in this contrastive we. Can be dad picks up and concedes the role claim, and would probably have been elipted rather than spelt out if it had not been in distributive contrast with the second part of the utterance. Otherwise, the response would have been Yes, or yes, you can. Michèle

then uses and to conjoin a remark to a different addressee, and uses we to join speaker and addressee in a single set. The inclusive we seems to emphasise possibility rather than permission in the semantic field of can. The rest of the predicate be two mums carefully distributes the roles with the quantifier two which coheres both with the we and with the pluralisation of mums, which refers to a complementary abstraction to the role of dad claimed by Freddie.

It is not claimed that this analysis is in any way exhaustive, but it does attempt to consider together both the pragmatic, semantic and syntactic elements within a snippet of interpersonal discourse so that the full psychological complexity stands revealed. The reference, or what Halliday might call the ideational element is concerned with a game in which the roles and rules are represented in the minds of the two children speaking. The game of mums and dads is not a concrete existent which can be pointed out like a table or chair, it is a set of roles, rules and expectations which allow some latitude of interpretation, but are distinct from the set governing 'doctors and nurses' or 'policemen', and even more distinct from roles played in real life. It takes some time for children to learn and elaborate these rules though they begin very early. (Bruner and Sherwood 1976). They appear, however, to find no difficulty in representing them as being shared, for although there may be frequent arguments about the rules, these could only take place on the presupposition that other persons understand and follow rules, even if they are the wrong rules.

These rules are part of the latent frame of reference which is presupposed in interaction, the immediate or manifest frame of

reference is each child's perception of what they and the others are doing at the time of utterance and an interpretation of the immediate environmental setting. This immediate frame of reference contains both the direct reflection of what is going on in the mind of each participant, and inferences about how these events are reflected in the mind of others. This double focus is made possible by the construction of a system of rules and probabilities based on previous experiences of persons and interpersonal interaction. It seems probable that this system of rules and probabilities has constant features which are as generalised and powerful as those which govern interactions with things in space which have hitherto tended to dominate thinking about cognition. This paper suggests that basic structural features of language provide clues to the structural feature of social cognition, but only if these linguistic features are considered in the light of their place in interpersonal interaction.

LANGUAGE CONSIDERED AS AN INTERACTIVE SYSTEM

If one examines sequential dialogue, and not individual utterances, there appear to be three main dimensions of attention and organisation in the linguistic behaviour of speakers (a) that which organises and acknowledges the relation between the participants (b) that which picks out the mutual field of attention and (c) that which expresses what the speaker is doing in speaking. These are closely interwoven parts of the meaning system, each affecting the other and they are distinguished for the convenience of the onlookers attempt to understand without any implication that they can be separated in performance.

The speech act element, that which indicates what the speaker is doing in speaking, is imbedded in the other two and is affected

by the speakers beliefs about the other persons perceptual field, and also about their probable response as constrained both by their current activity and by behavioural constants derived from their range of predictable responses inferred from previous encounters. It also includes hypotheses about the latent frame of possible previous experience, at least some of which is expected to be similarly conceptualised and shared. In particular, the speaker will have inferences about the listener's social experience which will be expected to result in rule-like generalisations, some of which are also expected to be held in common. The common element in experience is a necessity for efficient communication, but without some diversity of viewpoint, intention/experience or rules, communication in the sense of giving new information or stimulating new action would be unnecessary or even impossible. Both commonality and diversity are essential for the reciprocal creation of the future which lies at the heart of social interaction. When language is considered from this point of view, many features which have either been neglected or misinterpreted begin to form part of a coherent whole and many elements which have already been extensively studied acquire new richness.

Take first the dimension of language which serves to set up and maintain the relationship between speaker and hearer. This contains devices to set up a mutual field of attention, such as summons and address, devices to maintain reciprocity such as turn-taking, acknowledgements such as yes and no which also double up as answers, tags, and other requests for response and acknowledgements. These all appear very early in language. Mutual acknowledgement and turntaking are such primitive features of the communication system that they are among the first manifest signs that communication is taking place at all. (Lewis & Freedle 1973).

Prelinguistically the young baby has a repertory of devices for creating a mutual field of attention, but among the first acquisition of actual language are the vocative use of names and titles, Anna! Mummy!, greetings and summons such as Hi or Hey. Slightly later, but rapidly reaching a high frequency are words such as look which are specifically directed at securing visual attention. Look was by far the most common verb in the nursery language records collected by the author, being more than twice as frequent as the runners up, come, get and put and their compounds.

Having set the field up, the child often works to maintain it by using the alternation of dialogue turns by which he signals that the field is still mutually shared. This is not at first a closely knit series of exchanges unless the mother/caretaker attempts to organise it thus. The echoic and imitative vocalisations of young children, their tendency to pick up and feed back the terminal part of the vocalisations of adults may operate as much as a channel holding device as a check on the negotiation of meaning. This echoic, running commentary type of language instanced by Bloom's study of her own daughter (Bloom 1973) appears to resemble in many ways the repetitious running commentary of the mothers in the dialogues examined by Snow (1975, 1976). The child may be doing what the mother is reported by Snow to be doing, i.e. attempting to maintain contact to explore the possibility of interpersonal meaning rather than specify particular meanings. For the child this mere possibility of an intersubjective field may be sufficiently satisfying. The reciprocal utterance/response form is a function of face to face communication, and the young child may move about playing and uttering odd words, content to be within contact range,

accepting the minimal response of the mother or caretaker as a sign that the field is still 'live'. If she should fail to respond the child will usually approach and make attempts to restore the field.

In more intensive communicative episodes which have the turn taking character mentioned previously, the child will learn devices such as discourse deictics for naming and claiming the speaker role, (own name, or I) for designating the listener role (name, status name, or you) and for referring to 'third persons' (he, she, they) or things (it, they). Around the speaker/listener pair will begin to grow a penumbra of interpersonal meaning defining discourse and action roles. These roles will also come to reflect the asymetries of status and initiative inbuilt in the age and power relationships within the family and later still the specific address forms which specify these differences within society. Names, and role names such as mummy and daddy begin to develop complex functions and rules for usage which are certainly visible by the time the child is three. Their use as calls or summonses branches out into their use as address forms, especially at the initial stages of an interaction sequence, in making formal requests, and also in terminal sequences where some breach of interpersonal frame has caused distancing, as in examples B 1&2 below. In such sequences they are frequently accompanied by modulation of the verb phrase as the child grows older.

THE MODULATION OF SPEECH ACTS TO TAKE ACCOUNT OF THE LISTENER

This sophisticated device of using auxiliary modal verbs for the modulation of speech acts to suit the intentionality, status and relative interpersonal distance of speaker and hearer comes at the end of the second year and beginning of the third year of life. (Wall 1974). It depends on the acquisition of a series of

rule-like constraints on behaviour and regularities in the outcome of events which begin to peg out the complex and overlapping field of objective possibility and probability and social permissability. An early stages of acquiring these rule-like social constraints is charted by Derek Edwards elsewhere in this Volume ( ). Negative and interrogative forms are the first modulations, and they are followed by modal auxiliaries and other modal expressions. Their elaboration and interweaving with language is a continuous developing process. The use of modal expressions is one of the main features to show rapid increase in incidence in the language of children between three and five, and the connection with the social rule system is their dominant feature. (Shields 1974). There is no doubt that the system grows more refined and complex for many years as experience of both the impersonal and personal world accumulates and becomes more differentiated, but even pre-school children use modulated forms which bear witness to the development of some consideration for the voluntary nature of human activity, the need to consider the status and views of others and negotiate interpersonal activity.

Here are some examples of social overture which not only use modal auxiliaries, shall, will, can, but also use direct address by names as well as discourse deixis by pronominals indicating the importance of the interpersonal frame:

A 1. girl (3.7) Shall we play with something else, Andrew?

2. boy (3.7) Will you come and play with me if I don't hit you?

3. boy (3.11) There you are Steve, everytime, you know, I'll sit near you and I'll play with you.

4. girl (4.5) Michelle can I play with you, and can I be the sister or the other girl?

and here are some examples of brush off and territorial defence, which again exhibit modulation and contrastive role;

B 1. boy (4.9) No, I won't be your friend.

2. girl (4.2) Don't be silly Anne or I really won't play with you.

ORGANISING THE SHARED FIELD OF REFERENCE

The elements of language which connect the utterances of speakers with a shared field of reference can be divided into three groups, those which plot the immediate field of attention and activity around the speaking pair, those which connect the utterance with what has already been said, and those which place the utterance against a latent frame of meaning which all members of the communicating set bring into the interaction with them. The analysis of this set of features has usually been dominated by consideration of the most powerful member, specific labelling whether of persons, events, environments or things. This has diverted attention from the important role of other features such as deixis which serve to point out the focus of attention within a shared field which is organised by co-ordinates expressing proximity to the speakers standpoint.

There is evidence of prelinguistic deixis in work on young babies (Edwards, this Volume; Bruner 1975) and among the first functors which appear in nearly all the protocols of initial language acquisition are a number which seem to act as primary field organisers noting the appearance and disappearance, accumulation, and iteration and absence from the field of persons and objects. These are words such as Hi, more, allgone, away, no, another and again. (Brown 1973; Schaerlaekens 1974; Bloom 1973). Most of these double as performatives in demand and request forms,

and even in their referential role appear to pick out aspectual features of shared activity, its ongoingness, and its termination. The combination of these primary functors with specific referents is what gives the early two word utterances their 'pivot look'.

Very soon the list of functors is extended by the field deictics such as this and that and here and there, placing the referential material in relation to the immediate or distal focus of the speaker. Pronouns which organise objects and persons in the 'third place' in relation to the speaking pair such as he, she, it and they, begin to appear together with words which associate persons and things such as my and mine which supplement the device of juxtaposing the referents as in daddy chair, mummy book. The focus of organisation is the speaker/hearer relationship, and deictic devices plot the field of reference from this central point, all else being in third person or third place. Soon this intersubjective space will be further organised by locative expressions which relate objects in it one to another. The first prepositions, in and on, pick out containment and juxtaposition, and they are soon joined by many other locating expressions. Indeed locatives are the most frequent adjuncts in the speech of children before school. Nevertheless, space continues to be plotted from what Herbert Clarke calls the canonical encounter, face to face interaction. (Clarke 1973).

The emphasis of specific naming as the main feature of reference has helped to conceal the role of intersubjectivity. Reference has been treated as though it expressed a direct connection between a word and a thing within a single mind, or even between a word and a thing 'out there'. This is to confuse at least three separate dimensions of meaning. First there is the

connection between the mind and what lies outside it which is mediated by the afferent nervous system, and has the effect of building up a representation of that world within the mind. This is what Pavlov called the first signalling system, and, although human communication will profoundly affect some aspects, other aspects are objective in the sense of providing a good fit with material realities. Second there is the linguistic system of reference which is a social device which maps arbitrary vocal signals onto this representation and allows us to communicate about it, and thirdly there is the act of reference which depends on mastering the linguistic system, but is not aimed at the connection between words and referents. Its aim is to use the system to call up representations in another mind. What is important is not that the referent should be present, but that is should be perceived, recalled or attended to. An act of reference is successful, not by means of the connection between word and event in the mind of the speaker, but by the speakers success in evoking a similar representation in the mind of the listener.

THE INTERPERSONAL NATURE OF THE ACT OF REFERENCE

The fact that the reference system is a social product, existing as a shared complex in the minds of members of the speech community into which the child is born, does not make the system into an object for the child. The child has to undergo an extensive apprenticeship in acts of reference in which he attends to the focus of attention of another person, and in which that other attends to his, before he can grasp the signals which form the vocal articulation of this shared focus. Much has been made of the arbitrary connection between the vocal signals and their significates, but there is nothing arbitrary about the structure of an act of reference which requires a joint focus of attention

and an index for what is attended to which can be relied upon to create this focus between speaker and hearer through perception or recall.

The index may be a specific nominal, or it may be a deictic device, more often the latter. The use of such non-specific referents is wholly dependent on the hypotheses of both parties in the interaction about what the other is attending to. This process is seen at work in the language of nursery children in the following extract from a series of 61 exchanges. The specific nominals are nearly all employed to give privileged information in answer to questions. Apart from the initial remark in the conversation the sea-shells which are the focus of attention are indexed by this, or that, or them, or this one, that one or those ones, some. One is an extremely abstract index referring only by countability. In remark No. 9 the specific referent shell is probably used in contrast to stone in remark 8, the focus on shells having to be reinstated after the discovery of a stone. In remark 11, shell is again specified, possibly in contrast to those ones. Both mentions are in object position. In the 47 nominal groups in subject position in the total of 61 exchanges, only four are expounded by specific nouns.

Example 2 Sample of Elicited Conversation

Ch/NS No.5 6/2/70. A student teacher half empties a large collection of shells onto a table. Anna (4.11) Ann (4.7) Teresa (4.10) come up to look at them.

1. S.T.: (to all) I've brought these shells from the sea-side.

Anna turns several shells over.

2. Anna: (S.T.) I haven't seen them at the sea-side.

Ann picks out three periwinkles, and picks one up to examine.	3. Ann:	(all) Some are small. That's small.
Ter. shows a shell.	4. Ter:	(to all) Look!
Ann sorts out a collection of periwinkles.	5. Ann:	(S.T.) That one's small and this one is.
Picks up a marble pebble and holds it out to Ter.	6. Anna:	(to Ann) That's a round one.
	7.	(to Ter) What's that?
	8. Ter:	That's a stone.
Anna goes to fetch a large conch shell from the nature table.	9. Anna:	(to S.T.) We have a shell over here.
Ter is holding a large whelk to her ear.		(to Ter) What can you hear in your shell?
Ter puts the shell down and tries another.	10. Ter:	A noise.
Anna returns with the conch weighing it up and down in two hands.	11. Anna:	(all) This is a bigger shell than those ones. I can carry this one.
Ter sings into her shell. Anna puts her conch shell to her ear.	12. Ter:	Can you hear anything, Anna?
	13. Anna:	The sea.

(conversation continues for 61 exchanges.)

In the sample of the language of nursery school children collected by the author of which this example is an extract, no less than 93% of the nominal groups in subject position were expounded by pronouns. What is not always realised however, is the sheer pervasiveness of this system in the English language as a whole. The collection of written and spoken material on which

Quirk and his colleagues based their Grammar of Contemporary English (Quirk et al 1972) has been examined by Aarts for features of the nominal group, and he found that in adult informal speech 87 of the subject groups were represented by pronominals, this dropped to 79% in light fiction and to 70% in formal written and spoken English. (Aarts 1971). Only in scientific English did the proportion reduce to 39% and this was probably due to the linguistic effects of the scientific posture of impersonality which tries to eliminate human agency by jacking up the number of passive sentences e.g. Correlations were calculated rather than I calculated correlations.

THE INTERPERSONAL STRUCTURE OF TIME REFERENCE

Time reference is even more dependent on hypotheses about the experiences of others. It is always plotted from the now of the time of utterance. Events in the past and events in the future are not immediately perceptable at the time of speaking, they are wrapped up in memory or about to unfold in predicted happening or intended action. To refer to events in the past or future successfully, the speaker must rely on the ability of others to bring into the present i.e. the time of utterance, events which have been experienced in the past, and to understand others when they do the same. The speaker also relies on them to be able to unfold future events from the time of utterance either as prediction or intention.

As has already been pointed out, the early devices for organising the shared field appear already to have a time element or aspect which is close to the 'now' focus. This gradually extends into the past and progresses into the future, but for the young child it is nearly always closely linked to current

human activity. According to Roger Brown, the past tense begins to be marked on to the children's verb phrases at an M.L.U. of under 3.0 morphemes and follows very shortly after the marking of progressive aspect. (Brown 1974 p 271). Roger Brown also notes the fact that before the children he studied showed any marked form of the verb, the parents regularly glossed for progressive, past, intentional and imperative senses thus scaffolding the development of an idea of shared past and intended future differentiated from the now ongoing field of activity. The elaboration of these forms is cultivated by gambits of the tell daddy what we did today variety. The future is stretched and sequenced by interactions such as:

Example 3 E. 2.16 Go swings?

M. In a minute, when I have finished washing up.

From the now and immediately after now of ocing to, time is matched to the sequence of activities by in a minute, later, when we have had dinner, when daddy comes home, tomorrow, next week, and so on. Finally, well on into school life, the succession of past or projected events can be matched to an objective calendar, but the use of that calendar remains the same as the use of the early time markers - the matching and co-ordination of human actions in the past and in the future.

THE CO-ORDINATION OF UTTERANCES IN DISCOURSE

The ability of the child to take account of the sequence of events leading up to the present is witnessed by his capacity to fit his actions and words to the previous actions and words of himself and others in a series of interactions lasting over several turns. The careful carpentry whereby remarks are fitted one with another, taking account of what has previously been transacted can be seen not only grammatical in ellipses and pronominal reference but also semantically in the ability to recognise the hypotheses

contained in yes/no questions, and confirm or negate them, and the proposals contained in demands, commands, suggestions and pleas, and assent to or refuse them, even There is skill/in using such minimal responses as yes and no. (Shields 1975). Ellipsis or grammatical abbreviation which also fits responses in with questions matching both for grammatical form and propositional content and avoiding the redundancy of repetition is present very early but has too often been glossed over in the obsession with the grammar of the sentence. (Brown 1974 p.239; Shields 1972). Ellipsis is part of the grammar of discourse, not part of the grammar of sentences.

Dore (forthcoming) has shown that even responses which initially appear not to be answers to the previous utterance are often related to another part of the shared field of attention which could be relevant, and Garvey maintains that many responses which are not immediate responses to previous questions are often probes for further specification of the questioners intent or field of reference. (Garvey 1976). Remarks which have no ascertainable connection with previous utterances in a discourse are the exception rather than the rule, unless the speaker is introducing a new topic, or making a new initiative in action.

The fit between speaker's remarks is maintained on several different levels. There is the level of textual cohesion which is carried not only by devices such as ellipses which has already been made but also by definite and indefinite reference. Maratsos work shows that very young children begin to distinguish between a and the as markers of the new, and old material in discourse. (Maratsos 1976). Secondly there is cohesion between speech acts so that answers

cohere with questions, consents or refusals with demands and suggestions and please, complaints. In this way the active intent of one speaker is interlaced with the intent of others in the communicating group. Thirdly there is thematic cohesion in which the topic of reference is held and elaborated. This may relate to the immediate field of perception and activity, or the latent field which the speakers bring with them into the action in the shape of previous experiences, concepts and rules. Both the immediate field and the latent field form part of the presupposed or taken for granted background, usually specified only for the purposes of directing attention, changing the focus of attention or where misunderstanding must be repaired. Garnica has suggested that even speakers under two may make attempts to repair misunderstanding by varying intonation to highlight semantically important material. (Garnica, personal communication). Lee (1974) showed four year olds becoming quite adept at seeking direct clarification of the utterances of others by questions. These are both exercises in efficiently holding a joint focus of attention which may inhere in current activity, past recollections, or future plans or in the systems of behavioural roles and rules which begin to elaborate very early.

THE MANIFESTATION OF PRESUPPOSED RULE SYSTEMS

The powerful and largely tacit networks of shared rules and meanings which structure our fields of social action have, with the possible exception of those defining sex role, not yet been fully traced to their childhood origins. We now know that socialisation begins from birth, the structure of the rule systems acquired have yet to be systematically explored. Indeed the idea that rule systems rather than affective bonds underly social relationship has still to gain acceptance. (Harré 1974). Edwards,

however, points out elsewhere in this volume the importance of the early learning of constraints on behaviour as an introduction to a shared meaning system. The scrap of conversation between Freddie and Michèle analysed at length earlier on showed that three and four year old children take such systems of rules for granted within a play setting, but the system goes far beyond games with rules. The extract below shows a little boy of nearly four faced with authority, so often the source of constraints and rules, engaging in a series of exchanges nearly all of which are either enunciations of rules, appeals for reasons for rules, or appeals against implied breaches of rules and concludes with a sequence in which the experience of the preceding interactions is translated into projected future behaviour and imbedded in a complex way within an elaborate social overture.

Example 4 Michal (3.11) and Susy (2.5), later Steven (2.6).

Mic and Sus are using dough in the home corner. Mic is making cakes. Sus is watching him and is sucking her dummy, she always has this in her mouth whatever she is doing.

Mic leans across and takes the dummy. Sus cries immediately, the Playgroup leader bustles towards the disturbance –

Mic justifies. He appeals to two underlying rules like presuppositions (a) only babies have dummies (b) it's babyish to cry.	1.	Mic.	She's a little baby to have, to have a dummy. She's a little cry baby.
P.L. directs and justifies with presupposed rule (c) you should not deprive people of things they like.	2.	P.L.	Don't take Susy's dummy Mic. She likes it.

dummy episode

Mic wipes the dummy over the table to make it dirty, and appeals to another pre-supposed rule (d) dirty things should not be put in the mouth.	3.	Mic.	You don't want your dirty old dummy, it's dirty.
P.L. overrides Mic, and pacifies Sus.	4.	P.L.	Give me the dummy Michael. There you are Susy.
Mic goes back to his pastry. N.T. watches Sus and Mic for a minute.	5.	Mic.	I'll make a picture.
Mic takes all the dough, but then hesitates and turns to N.T., and gives a new interpretation of rule (c) what Sus had she might want, what she wants, she ought to have. Appeal to authority.	6.	Mic.	(to P.L.) She had all this before, didn't she? D'you think she wants a bit?
P.L. accepts and directs then gives new direction with another rule (d) boys should look after girls/little children.	7.	P.L.	I think she would Mic, you give Sus half. You look after her. Boys have to look after little girls.
Mic asks justification.	8.	Mic.	Why?
P.L. justifies with new rule (e) the big and the strong look after the little and weak.	9.	P.L.	Because they are bigger and stronger.
Mic looks doubtful, P.L. attempts to re-establish relationship, leaves them. Sus looks sulkily at Mic and does not answer his	10.	P.L.	(to Sus) Mic's going to look after you Sus.

dummy episode

sharing episode

sex role episode

question. He pushes the cake tray towards her, she takes it and throws it away.	11. Mic.	(to Sus) Wanna play?	sex role episode
Mic appeals against breach of rule (f) gifts should not be rudely refused. N.T. does not hear Mic – he was perturbed at Sus's reaction.	12. Mic.	(to P.L.) Know what? I give, I give her that thing, an' she threw it.	
He gives her a piece of dough.	13. Mic.	(to Sus) There you are.	
Sus pushes it away. (Mic searches visually for P.L.)	14. Sus.	No!	
Ste. enters and looks at Sus. Mic evokes rule (a) and (b) to exclude Sus. Ste looks blankly.	15. Mic.	(to Ste) She's got a baby's dummy.	social rejection & new social overture
Mic goes off. He collects a chair for Ste, and puts it beside his own. They sit and play together. There is no conversation.	16. Mic.	(to Ste) There you are Ste, everytime you know, I'll sit near you and I'll play with you.	

This series of exchanges shows the remarkable persistance of an underlying frame of reference which is highly structured with behavioural norms. Each of the four episodes has a different inter-personal context, a different context of activity and a different topical focus. There are four successive changes of relationship as the Michael/Susy interaction gives way to the Michael/Playgroup Leader interaction, with Susy as third person, and then to the Michael/Susy interaction with the Playgroup Leader brought in on appeal, followed by the Michael/Steven interaction. It is the roles played in these interactions which dominate the speech acts

of the speakers and seem to invoke and animate the frame of rules. The manifest frame of reference, the dummy, the play cooking with dough, have a less dynamic significance, providing the contingent stimulus of props and scenery rather than substance to the interaction.

The roles being played in this interaction are social roles already heavily tinged with the differentia of age, sex and authority. It is the contention of this paper, however, that however early these differentiating concepts take root, they are built in to a still more fundamental set which contain defining characteristics of human persons. No doubt there are physical dimensions of the concept of a person such as those studied by Lewis and Brooks (1975) and dimensions of overt behaviour, such as walking, eating, sleeping and so on. It is however the psychological dimension that is explored here, the representations which the child has of perceptions, intentions, experience and memory in others. It is not claimed that this psychological knowledge is reflected upon as a whole, so that the child knows he has a concept of a person, any more than he knows he has the concept of a thing. The child's knowledge is the underlying substratum of his success in interacting with persons before he has knowledge of his knowledge of persons. As Piaget recently pointed out 'pris de conscience' or knowledge of know how comes a long time after the know how is successfully established. (Piaget 1976). What is claimed is that there is a gradual building up of hypotheses and expectations and rules which act as a working psychology, that same naive psychology which Heider discussed at length. (Heider 1958). This naive psychology has constants which allow generalised prediction about human beings as a whole and variable features which allow prediction of the probable behaviour of individuals. These variable features

later generalise into dimensions of variation in a more complex model of human character.

What is constant tends to be taken for granted or presupposed, and therefore is more difficult to make salient. This is no doubt why research in this area which is usually based on differentiating characteristics tends to be so unsatisfactory. If a child is asked to name a friend and then tell the investigator something about him, he is unlikely to mention that his friend is alive, stays the same person, can remember things, can see things or can talk, or even that he can walk, sleep and eat. The child is much more likely to name some differentiating characteristic, such as 'he has a swing' or 'he plays with me'. (Secord & Peevers 1974). It would be most unwise to conclude from this that the child's concepts of persons are adequately represented much less exhausted by such a description, for it is a basic characteristic of language built into its formal structure that speakers concentrate on new information taking the old information as part of the presupposed background.

CONSTANT FEATURES IN THE MODEL OF A PERSON

What then might the constants of the child's psychological model be? It would appear from the previous analysis of the main features of language as such, that at least the following psychological dimensions have begun to form as the child builds up communicative skill.

(1) Persons have identity over time despite changes in location, behaviour and appearance.

(2) Persons are self moving or animate, and influence over the course of their behaviour has to be negotiated by invoking interest or a shared frame of constraint.

(3) Persons identify each other and can react to each other.

(4) Persons can see, feel, hear, touch and smell, i.e. they have a perceptual field.

(5) Persons intend their actions.

(6) Persons conceptualise and construct their world in roughly similar ways.

(7) Persons have moods and states such as anger and fear, and also wants, likes and dislikes.

(8) Persons can send and receive messages based on gestures and words which are related to context in stable ways.

(9) Persons have an action potential i.e. things they can and can't do.

(10) Persons can retain previous experience and structure their present behaviour by it.

(11) Persons can replicate previous behaviours in new contexts.

(12) Persons share sets of rules about what is appropriate within particular frames of action.

Without the establishment of at least some elements in this framework, the social and communicative behaviour of young children could not be explained. Looked at in this way, much of the apparently routine, habitual and even ritualised nature of the baby caretaker interactions noticed in recent studies may be seen as laying the foundation for the invariancies on which stable expectations and hypotheses can be built and to which future experiences can be assimilated. Accomodation to the different, the variable and the new can then develop from a foundation in established cognitive schemes. If such schemes are not securely built either through misfortune or mismanagement or some endogenous defect in the developing child, the whole system of social skills and affective understandings is put at risk for reasons which are as much

cognitive as affective. This in turn may imperil the complex system of cultural transmission, distorting it and creating areas of inefficiency. If there is one thing which is a constant message in the new work on caretaker-child interaction, it is the centrality of the interpersonal relationship in the transmission of meaning.

ORIGINS OF THE CHILD'S MODEL OF THE SOCIAL WORLD

The growing literature on the social apprenticeship of young babies and on pre-linguistic and protolinguistic communication is beginning to illuminate this interpersonal generation of meaning. Several striking examples appear in this volume. The most visible process is the way the mother can be seen to attribute meaning to the behaviour of her infant. She persistently reads meaning into her baby's behaviour, and then reads out an interpretation on which she bases her own response (Newson 1974).
Not only that, but she enters into vocal dialogue with her child interpreting his signals as statements, often putting them into her own words and taking vocally both parts in the communication exchange. The work of Catherine Snow (1975) records this process with great sensitivity showing that the mother's model of communication as a two way process is not only implicit in her monitoring of the baby's behaviour and her adjustment to what she considers to be the meaning but is also modelled as a verbal exchange, the mother responding to the behaviours verbally, and also translating the behaviours verbally. Alternating behaviour i.e. the periods of monitoring followed by periods of acting may be an inbuilt characteristic of elaborate nervous systems, but at the human level it has produced a turntaking vocal dialogue so delicately structured that Lewis and Freedle (1973) conclude that 'the communication network even of the twelve week old baby and its mother is a non random, sequential and situationally determined

system'.

Even at this early stage then there is intentional emitting of signals, signalling in a vocal channel, perception of signals and feedback on their effects, together with interpretation of signals on the adult side and expectations concerning the effect of signals on the side of the child. Whether the child can interpret the adult's signals except in a global way or as signs for routine interactions is not certain, but the more predictable the maternal signalling in relation to context, the more capable it becomes of generating expectation and interpretation. The content of the interactions is closely interlinked with the child's biological states, and it is likely that the whole of the early network is soaked in affectivity, the main focus of interest being persons, their states and actions.

Young babies also take notice of non-animate objects in their environment, from an early stage, but it is the introduction of that object environment into the intersubjective network between mother and child to create a field of reference that constitutes the next essential step in communication. Synchronous visual tracking between the mother infant dyad allows the mother to feel that there is a world as well as a relationship to be shared. (Schaffer 1974; Newson 1974). At first it is the careful monitoring of the child's direction of gaze that feeds this into her interpretative system, but later the child can track into the mother's line of vision. (Scaife & Bruner 1974). As soon as objects are touchable and graspable, these can also enter the communication net in increasingly elaborate exchanges. (Bruner 1974). Furthermore the child is carried into a variety of different environments both inside and outside the home, and so a spatial field and the things and persons in it

become possible objects of shared attention and of communication. Bates and her colleagues (1975) suggests that this field of reference is not firmly built in to the interpersonal network until the end of the first year when they begin to notice that their subjects start to co-ordinate behaviour towards things with behaviour towards persons so that things could be used to get the attention of persons. Bruner (1976) also places the beginning of pointing behaviour, or early deixis, at the end of the first and the beginning of the second year. The two key features of communication, the exchange of meaningful action, and the contextualisation of that action within a field of reference are established before the conventional 'first word' appears. To use Halliday's magical phrase, the baby has already learned how to mean. (Halliday 1975).

CONCLUSION

The analysis presented here moves the story a little further on to children who have learned to operate the main functional systems of language, and have acquired a degree of skill in communication. It is argued that this skill itself is an index of the child's knowledge of other persons. This skill displays his ability to make hypotheses about the communicative competence of persons, hypotheses, about their perceptions, their concepts, their intentions, inclinations, moods and states, their memories and systems of rules. The child's image of the world is mirrored twice, once directly and again as a representation of the representations of others. His image of himself is also mirrored twice, once with direct knowledge of his internal states, and again by his representation of his behaviour in the eyes of others. Each image modifies and extends the other. This is by far the most elaborate and by far the most compelling of our human intellectual systems. It is the one which has the

most power to influence for good or ill our coping pattern in all the manifold activities of the social world. It forms the articulating skeleton of feelings and relationships, it outlines and defines our own humanity. Surely it is time that the cognitive psychologist came face to face with the young naive psychologist, and turned his sophisticated techniques to building a more adequate model of the growth of man's concept of man?

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